

The National 5 Mathematics course consists of 3 units:- Expressions and Formulae  
Relationships  
Applications

To achieve National 5 Mathematics students must pass an external exam set by the SQA.

Assessments will take place throughout S4 as indicated on the calendar overleaf. We will inform students of any formal tests well in advance of the test date. Some classes may work at a different pace so the calendar will be adjusted for their needs. As a safety net, it may be necessary to complete further internal assessments at National 4 level.

Students will be issued with a formal homework exercise approximately once every 2 weeks. They will be expected to regularly look over classwork and study throughout the year, using resources issued or recommended by the department. They should ask for help with anything causing difficulty. A profile booklet for each unit will be issued; this contains information about the content of each unit.

The department hopes to continue to offer Supported Study classes on Monday and Wednesday lunchtimes. We keep a register of attendance at Supported Study.

It is essential that pupils have their own scientific calculator for this course. Using a mobile phone calculator is not permitted by the SQA.

A strong understanding of the content of National 5 Mathematics along with the successful completion of all units and the external exam may lead to the study of Higher Mathematics.

Maths teachers will advise on the suitability to progress to Higher Mathematics.

### **Expressions and Formulae**

- Number work – surds and indices, rounding and scientific notation
- Algebra – multiplying out brackets, factorising, completing the square, working with algebraic fractions
- Geometry – finding the gradient of a line, lengths of arcs and areas of sectors, volumes of 3D shapes

### **Relationships**

- Algebra – solving linear equations and inequations, straight line, function notation, simultaneous equations, changing the subject of a formula, work with quadratic functions
- Geometry – Pythagoras' Theorem, similarity, properties of 2D shape
- Trigonometry – trigonometric graphs, solving trigonometric equations, trigonometric identities

### **Applications**

- Trigonometry – areas of triangles, calculating angles and lengths of sides of triangles, bearings
- Geometry – interpret 2D and 3D vectors, add and subtract vectors, magnitude of vectors
- Number work – add, subtract, multiply and divide fractions, compound interest, appreciation and depreciation, reverse percentage problems
- Statistics – 5-figure summary and boxplots, standard deviation, line of best fit, interpret results

National 5 Mathematics timeline (subject to change) – course starts at end of S3		
Week	Topic	
30	Change the subject of a formula	
31	Length of arc and area of sector	
32	Completing the square	
33	Algebraic fractions	
34	Surds and Indices	
35	Surds and Indices	
36	Gradient of a straight line	
37	Volumes of sphere, cone and pyramid	
38	Revision of EF unit	
39	Consolidation week	
40	Consolidation week	
	SUMMER HOLIDAY	
1	Straight line	
2	Straight line                      Function notation	
3	Solving equations and simultaneous equations	
4	Revision of changing the subject of a formula	
5	Circle properties	
6	Use of Pythagoras, converse and 3D      Similarity revision	
7	Trigonometry: graphs, equations	
8	Trig Identities	
	HOLIDAY	
9	Solve quadratic equations , Discriminant	
10	Quadratic functions and graphs	
11	Quadratic functions and graphs	
12	Quadratic equation from graph	
13	Consolidation of Quadratics work	
14	Prelim (provisional)	
15	Revision of Quadratics work	
16	Catch up week Revision of fractions and %	
17	Catch up week	
	HOLIDAY	
18	Vectors	
18	Vectors	
20	Sine rule, cosine rule and area of triangle	
21	Applications, including bearings	
22	Quartiles, inter-quartile range, standard deviation	
23	Equation of line of best fit	
24	Revision	
25	Revision	
26	Revision	
27	Revision	
28	Prelim	
29	Revision	